

ABSTRACT

The traditional nitride-only charge storage layer of a SONOS device is replaced by a multilayer charge storage layer comprising more than one dielectric material. Examples of such a multilayer charge storage layer are alternating layers of silicon nitride and silicon dioxide, or alternating layers of silicon nitride and aluminum oxide. The use of more than one material introduces additional barriers to migration of charge carriers within the charge storage layer, and improves both endurance and retention of a SONOS-type memory cell comprising such a charge storage layer.